

Claims

1. Method for fusing toner to a printing material (5), **characterized in that** the printing material (5) is guided in a contacting manner below the toner's glass transition temperature and that the printing material (5) is guided in a non-contacting manner above the toner's glass transition temperature.
2. Method for fusing toner to a printing material (5) as in Claim 1, **characterized in that** a cooling arrangement (20) cools the printing material (5) area-by-area or section-by-section.
3. Method as in Claim 2, **characterized in that** the cooling arrangement (20) cools strips of the printing material (5).
4. Method as in one of the previous Claims, **characterized in that** a stream of a cooling medium used for cooling the printing material (5) is directed at the printing material (5) in transport direction of the printing material (5) so that, as a result of this, the velocity of the printing material (5) is influenced and, in particular, a constant velocity of the printing material (5) is achieved as the printing material passes through a fusing arrangement (1) and through a subsequent cooling arrangement.
5. Method as in one of the previous Claims, **characterized in that** a narrow unprinted, i.e., without a toner image applied, leading section of the printing material (5), viewed in transport direction, is grasped by a gripper while the printed rear section of the printing material (5) is guided in a contactless manner.
6. Fusing arrangement (1), in particular for carrying out the method as in Claim 1, **characterized by** at least one device (40) for guiding the printing material (5) in a contacting manner below the toner's glass transition temperature and by at least one arrangement (50) for guiding the printing

material (5) in a non-contacting manner above the toner's glass transition temperature.

7. Fusing arrangement (1) for fusing toner to a printing material (5) as in Claim 6, **characterized in that** at least one heating arrangement (10) of the fusing arrangement (1) is inclined, relative to the heating arrangement's alignment, in a manner perpendicular to the transport direction of the printing material (5), and that the heating arrangement (10) comprises staggered transport belts (3) for transporting the printing material (5).
8. Fusing arrangement (1) as in Claim 6 or 7, **characterized in that** the arrangement (50) for contactless guiding of the printing material (5) is provided at the heating arrangement (10).
9. Fusing arrangement (1) as in one of the Claims 6 through 8, **characterized in that** the arrangement (50) for contactless guiding of the printing material (5) is provided following the heating arrangement (10).
10. Fusing arrangement (1) as in Claims 6 through 9, **characterized in that** the heating arrangement (10) comprises a microwave resonator having a cavity containing dielectric material, in particular, polytetrafluoroethylene.
11. Fusing arrangement (1) as in one of the Claims 6 through 10, **characterized in that** an air cushion arrangement (12) is provided for transporting the printing material (5).
12. Fusing arrangement (1) as in one of the Claims 6 through 11, **characterized in that** the paper path extends perpendicularly or almost perpendicularly downward, and comprises at least one air cushion arrangement (12), and that the fusing arrangement (1) is provided along

the paper path which extends perpendicularly or almost perpendicularly downward.

13. Fusing arrangement (1) as in one of the Claims 6 through 12, **characterized in that** at least one gripper is provided for grasping and guiding the printing material (5) through a fusing arrangement (1).
14. Fusing arrangement (1) as in Claim 13, **characterized in that** at least one vacuum gripper is provided for attracting the printing material (5) by means of the vacuum and for guiding the printing material (5) through the fusing arrangement (1).
15. Fusing arrangement (1) as in one of the Claims 6 through 14, **characterized in that** a pushing member for pushing the printing material (5) through the fusing arrangement (1) is provided.
16. Fusing arrangement (1) as in one of the Claims 6 through 15, **characterized in that** at least one heating arrangement (10) is provided so as to align with an angle perpendicular to the transport direction of the printing material (5), preferably an angle of 29 degrees.